(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 31 July 2003 (31.07.2003)

PCT

(10) International Publication Number WO 03/062526 A1

(51) International Patent Classification7: D21B 1/16

D21C 9/16,

(21) International Application Number: PCT/FI03/00051

(22) International Filing Date: 22 January 2003 (22.01.2003)

(25) Filing Language:

Finnish

(26) Publication Language:

English

(30) Priority Data: 20020123

23 January 2002 (23.01.2002) I

(71) Applicant (for all designated States except US): RIN-HEAT OY [FI/FI]; Miestentie 3, FIN-02150 Espoo (FI).

(72) Inventor; and

(75) Inventor/Applicant (for US only): TANNER, Teemu [FI/FI]; Palokorvenkuja 7 A 1, FIN-04250 Kerava (FI).

(74) Agent: OY JALO ANT-WUORINEN AB; Iso Roobertinkatu 4-6 A, FIN-00120 Helsinki (FI).

(81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

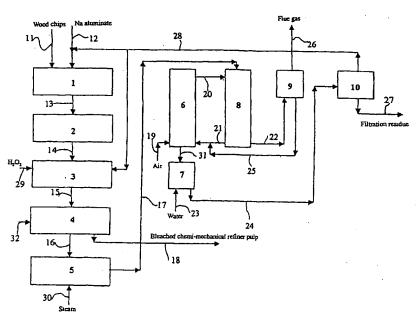
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR BLEACHING MECHANICALLY DEFIBERED PULP



(57) Abstract: The invention relates to a method for bleaching (3) mechanically defibered pulp (14) with peroxide in alkaline conditions and for washing (4) the bleached pulp (15) and recovering chemicals from the spent liquor (16) of the bleaching step by concentrating (5,8) and combusting (6) the spent liquor and subsequently dissolving (7) the ash thus formed into water (13). According to the invention, the alkaline conditions of the bleaching step are obtained by adding sodium aluminate (12) to the pulp (14) to be bleached, at least a part of the added sodium aluminate being said ash (28) dissolved in water.



/062526 A1

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 03/00051

A. CLASSIFICATION

BJECT MATTER

IPC7: D21C 9/16, D21B 1/16
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: D21C, D21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
Y	DATABASE WPI Week 198127 Derwent Publications Ltd., London, GB; Class F09, AN 1981-48892D & JP 56 058086 A (AGENCY OF IND SCI & TECHNOLOGY), 20 May 1981 (1981-05-20) abstract	1-9	
Y	US 4116759 A (JAN JANSON), 26 Sept 1978 (26.09.78), column 1, line 31 - line 41; column 3, line 35 - line 37; column 4, line 8 - line 10	1-9	
Y	US 4388148 A (RICHARD A. YAHRMARKT ET AL), 14 June 1983 (14.06.83), column 4, line 11 - line 14, claim 1	3-4	
.]	,		

	10 00 01 p= 1-1-1				
"E"	earlier application or patent but published on or after the international filing date	"X"	document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive		
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other	"Y"	step when the document is taken alone document of particular relevance: the claimed invention cannot be		
	special reason (as specified)	•	considered to involve an inventive step when the document is		
0	document referring to an oral disclosure, use, exhibition or other means		combined with one or more other such documents, such combination being obvious to a person skilled in the art		
"P"	document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family		
Dat	e of the actual completion of the international search	Date of mailing of the international search report			
	,		2 3 - 04- 2003		
22	April 2003				
Nan	ne and mailing address of the ISA/	Authorized officer			
Swe	edish Patent Office		•		
Box	5055, S-102 42 STOCKHOLM	Mari	anne Bratsberg/ELY		
			one No. +46 8 782 25 00		

See patent family annex.

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

Special categories of cited documents:

to be of particular relevance

Further documents are listed in the continuation of Box C.

document defining the general state of the art which is not considered

INTERNATIONAL SEARCH REPORT

Form PCT/ISA/210 (continuation of second sheet) (July 1998)

International application No. CT/FI 03/00051

	CT/FI 03/0	00051 	
C (Continu	ation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No	
A	Papper och Trä, Volume 6-7, 1977, Jan Janson, "The use of unconventional alkali in cooking and bleaching" page 425 - page 430		
			
A	DATABASE WPI Week 198345 Derwent Publications Ltd., London, GB; Class E33, AN 1983-813561 & SU 988939 A (CELLULOSE PAPER IND RES),	3-4	
	15 January 1983 (1983-01-14) abstract		
A	US 2601110 A (JOHN HENRY FISHER ET AL), 17 June 1952 (17.06.52)	1-9	
	,	-	
		:	

INTERNATIONAL SEARCH REPORT

nformation patent family members

29/03/03

ternational application No.

/FI 03/00051

Patent document cited in search report			Publication date	Patent family member(s)		Publication date	
US	4116759	A	26/09/78	AU	499100 B	05/04/79	
				AU	1712276 A	02/03/78	
•		,		BR	7605508 A	16/08/77	
	•			CA	1087355 A	14/10/80	
				FI	53141 B,C	31/10/77	
				FΙ	752463 A	03/03/77	
				JP	1307302 C	13/03/86	
		٠.		JP	52042901 A	04/04/77	
				JP	60029796 B	12/07/85	
٠.				NO	150807 B,C	10/09/84	
				NO	762969 A	03/03/77	
			•	NZ	181792 A	11/01/79	
				SE	7609675 A	03/03/77	
JŞ	4388148	- A	14/06/83	NONE			
JS	2601110	Α	17/06/52	NONE			